



<b>REPLY/AMENDMENT FEE TRANSMITTAL</b>	Attorney Docket No.	95-333	<b>RECEIVED</b> <b>MAR 29 2004</b> Technology Center 2600
	Application Number	09/496,212	
	Filing Date	February 1, 2000	
	First Named Inventor	VISWANATH	
	Group Art Unit	2665	
AMOUNT ENCLOSED	\$ 0	Examiner Name	RYMAN, Daniel J.

**FEE CALCULATION** (fees effective 10/01/2003)

CLAIMS AS AMENDED	Claims Remaining After Amendment	Highest Number Previously Paid For	Number Extra	Rate	Calculations
TOTAL CLAIMS	18	20	0 <sup>(3)</sup>	X \$18.00 =	\$0
INDEPENDENT CLAIMS	3	3	0	X \$84.00 =	\$0
Since an Official Action set an <u>original</u> due date of <u>December 30, 2003</u> , petition is hereby made for an extension to cover the date this reply is filed for which the requisite fee is enclosed (1 month (\$110); 2 months (\$400); 3 months (\$920); 4 months (\$1,440); 5 months (\$1,960)):					\$0
If Statutory Disclaimer under Rule 20(d) is enclosed, add fee (\$110)					+ \$0
Total of above Calculations =					\$0
Reduction by 50% for filing by small entity (37 CFR 1.9, 1.27 & 1.28)					-
<b>TOTAL FEES DUE =</b>					<b>\$0</b>

- (1) If entry (1) is less than entry (2), entry (3) is "0".  
(2) If entry (2) is less than 20, change entry (2) to "20".  
(4) If entry (4) is less than entry (5), entry (6) is "0".  
(5) If entry (5) is less than 3, change entry (5) to "3".

**METHOD OF PAYMENT**

- ☐ Check enclosed as payment.
- ☐ Charge "TOTAL FEES DUE" to the Deposit Account No., below.

**AUTHORIZATION**

- ☒ If the above-noted "AMOUNT ENCLOSED" is not correct, the Commissioner is hereby authorized to credit any overpayment or charge any additional fees under 37 CFR 1.16 or 1.17 necessary to maintain pendency of the present application to:

Deposit Account No.: 50-0687

OrderNo.: (Client/Matter) 95-333

**SUBMITTED BY: MANELLI DENISON & SELTER PLLC**

Typed Name	Leon R. Turkevich	Reg. No.	34,035
Signature		Date	March 26, 2004

Docket No.: 95-333

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of : **EXPEDITED PROCEDURE UNDER**  
VISWANATH et al. : **37 CFR §1.116**

Serial No.: 09/496,212 : Group Art Unit: 2665

Filed: February 1, 2000 : Examiner: Ryman, Daniel J.

For: **ARRANGEMENT FOR SEARCHING PACKET POLICIES USING MULTI-KEY  
HASH SEARCHES IN A NETWORK SWITCH**

**RESPONSE AFTER FINAL**

**RECEIVED**

**MAR 2 9 2004**

**Technology Center 2600**

MAIL STOP AF  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

In response to the final Official Action mailed January 26, 2004, Applicant hereby submits the following remarks.

Reconsideration and allowance of the above-referenced application are respectfully requested. Claims 1-3 and 5-19 are unchanged and remain pending in the application.

Claims 1-3, and 5-8 stand rejected under §103 in view of U.S. Patent No. 6,243,667 to Kerr et al. in view of U.S. Patent No. 6,091,725 to Cheriton et al. Claim 9 stands rejected under §103(a) in view of Kerr, Cheriton et al., U.S. Patent No. 5,949,786 to Bellenger, and U.S. Patent No. 5,640,399 to Rostoker. Claim 10 stands rejected under §103(a) in view of Kerr, Cheriton et al., and U.S. Patent No. 6,118,760 to Zaumen. Claims 11, 14, and 15 stand rejected under §103(a) in view of Kerr and Zaumen. Claims 12, 13, and 16-18 stand rejected under §103 in view of Kerr et al.,

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Zaumen et al., and Cheriton et al. Claim 19 is rejected in view of Kerr et al., Zaumen et al., Cheriton et al., Bellenger, and Rostoker et al.

All of the above rejections are traversed. The comments from the response filed January 8, 2004 are incorporated in their entirety herein by reference. The following comments address the "Response to Arguments" section of the Final Action.

The Final Action further demonstrates that the outstanding rejections are legally improper, as the Final Action relies on a remarkable disregard for the explicit teachings of the references as well as the explicit claim language to reach ill-founded conclusions that have no basis in fact or law.

For example, the Final Action in paragraph 1 provides a tortured interpretation of Kerr and the claims by inventing a fictional "hash expression": according to the Final Action, the hash key of Kerr is a "hash expression" and the claimed signature is a "hash expression".

This argument is both nonsensical and legally improper: claim 1 (and claim 16) explicitly specifies that the hash signature is generated based on "combining the first and second hash keys". Hence, claim 1 specifies both a hash key and a signature.

Moreover, the reference to col. 10, lines 20-25 is simply a prophetic example that describes variations "within the concept, scope, and spirit of the invention". However, the invention claimed in Kerr et al. explicitly specifies that only a single unique hash key is generated:

generating a unique hash key by each of the routing devices that receives the first plurality of messages, the unique hash key being based upon the address of the selected source device, the address of the selected destination device, a port number associated with the selected source device, a port number associated with the selected destination device, and a protocol type corresponding to the first plurality of messages.

(See claims 1, 11, 16 at col. 10, lines 41-48, col. 11, line 64 et seq. and col. 16, lines 48-59, respectively).

Further, col. 12, lines 5-6 further claim “wherein said first one of said message flows is identified by the unique hash key.”

The only other reference to “hash” is at col. 4, lines 8-11, which describe that “the routing device 140 determines a hash table key responsive to the flow key 310.”

Hence, Kerr et al. does in fact teach away from the claimed feature of “combining the first and second hash keys according to a prescribed combination into a signature for the received data packet.”

Paragraph 2 of the Final Action stresses that the term “switch” is in the preamble, but disregards the fact that the references themselves distinguish between a switch and a router: The Final Action ignores the fact that Cheriton et al distinguishes between routers and network switches (col. 3, lines 45-62), specifying that datagrams at the datagram packet layer provide packet switching using a media access control (MAC) protocol such as Ethernet (see col. 2, line 3 to col. 3, line 9; col. 6, lines 8-14 and 41- 53) (i.e., a “layer 2” protocol); in contrast, routers operate primarily at the network protocol layer, rather than the datagram packet layer (col. 3, lines 56-58). Hence, one skilled in the art would not have been motivated to combine the two references, as asserted. “The mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification.” In re Fritch, 23 USPQ2d 1780, 1783-84 (Fed. Cir. 1992).

Paragraph 3 asserts that “[s]ince hashing is a mathematical or logical function performed on bits in a packet, a hashing function may be performed on any bits in a packet regardless of the bits [sic] respective layer.” Applicant challenges the Examiner to provide any evidence to support this ill-founded assertion: Kerr generates a single hash from layer 3 information; Cheriton et al. generates

a single hash from layer 2 information. In fact, the portion of Cheriton et al. cited by the Final Action (col. 9, lines 48-60) refutes the very position asserted by the Final Action:

Referring now to FIG. 7, the specific hash function logic is the bitwise Exclusive-OR 703 between the low-order 15 bits of the destination address 701 and the source address 702 of the Virtual Path Index 630.

Regardless, the assertion that “one of ordinary skill in the art would recognize that this hash function can also be applied to the addresses of other layers” is a nonsequitur, because it does not address that claim 1 specifies: generating a first hash key; generating a second hash key; and combining the first and second hash keys according to a prescribed combination into a signature for the received data packet.

Paragraphs 4-6 also fail to address this feature of claim 1, because substituting the prescribed hash function is not at issue (note claim 1 specifies that both the first and second hash keys are generated according to the prescribed hash function); the issue is that there is no disclosure or suggestion in the applied references to combine the hash keys into a signature.

The Final Action then makes the unreasonable assertion that “Kerr is modified with Cheriton which discloses how to generate a hash signature using first and second hash keys generated from first and second layer [sic] information.” As described above, Cheriton uses only one hash key.

As quoted above, “The mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification.” In re Fritch, 23 USPQ2d 1780, 1783-84 (Fed. Cir. 1992). There is no disclosure or suggestion in Kerr or Cheriton, singly or in combination, that two

separate hash keys would be combined to form a signature, as claimed. Both Kerr and Cheriton disclose that only a single hash key is used as an index for searching a table. The fact that the references use different parameters to generate the single hash key is inconsequential: one skilled in the art would conclude no more that only a single hash key is used as an index for searching a table.

In fact, as asserted by the Final Action: “the purpose of hash functions is to increase the speed of a table look-up.” Consequently, one skilled in the art would avoid generating a second hash key and combining the first and second hash keys, as the references amply demonstrate that a single hash key is sufficient for table look-up, and that the parameters of the single hash key (e.g., as specified at col. 10, lines 41-48 of Kerr) are merely a matter of design choice.

For these and other reasons, the rejection of claims 1-3 and 5-8 should be withdrawn.

Paragraph 9 demonstrates that the Examiner refuses to interpret the claim according to its broadest reasonable interpretation. Claim 10 recites (in part and based on incorporating claim 1):

searching a table, configured for storing layer 3 signatures that index respective layer 3 switching entries, ... for the selected selected layer 3 switching entry ... further comprising forwarding an identifier specifying the selected layer 3 switching entry from a network switch port, having received the data packet, to layer 3 switching logic within the network switch.

Hence, the claim language specifies that the identifier is used to specify the selected layer 3 switching entry.

Futhermore, the assertion that the identifier could be “anything that could be used to identify the switching entry, such as a packet, a header of a packet, etc., is inconsistent with the purposes of using a hash key in the first place. (See, e.g., U.S. Patent No. 6,084,877 to Egbert (of

record) at col. 1, lines 31-59, incorporated herein by reference). As demonstrated by Egbert, one skilled in the art would not use the entire packet or header if hashing was already being performed.

Hence, the rejection of claim 10 should be withdrawn.

Paragraph 10 is in error both in fact and law. Independent claims 11 and 16 explicitly specify an integrated network switch: claim 11 specifies within the preamble “A method ... within an integrated network switch having a plurality of network ports and switching logic” and claim 16 specifies within the preamble “An integrated network switch configured for executing layer 3 switching decisions”. These preambles are specific structural limitations that limit the claim invention to a network switch that is integrated on a single chip.

As specified in the MPEP §2111.02, Rev. 1, Feb. 2003 at page 2100-49: “Any terminology in the preamble that limits the structure of the claimed invention must be treated as a claim limitation.” (Citing Corning Glass Works v. Sumitomo Elec. U.S.A., Inc., (See also MPEP §2111.02, Rev. 1, Feb. 2000 at page 2100-38: “In claims directed to articles and apparatus, any phraseology in the preamble that limits the structure of that article or apparatus must be given weight” (citing In re Stencel, 828 F.2d 751, 4 USPQ2d 1071 (Fed. Cir. 1987))) (See also Kropa v. Robie, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951)(preamble reciting “An abrasive article” deemed an essential limitation)).

Hence, the term “integrated network switch” is a specific structural limitation that must be given weight in claims 11 and 16. (The assertion that “integrated” is defined as a “unified whole” is utter nonsense and meaningless in the art of engineering, and inconsistent with the description in the specification of “integrated” as “single-chip”.)

Paragraph 11 demonstrates that the Examiner does not understand Applicant's argument: the subsystems 110, 120 in Zaumen are not network switch ports, as claimed. In other words, each subsystem (e.g., 110, 120) cannot be considered as a single port because each subsystem serves multiple links 117. Further, the subsystems 110 are connected by a PCI bus (see col. 5, lines 22-24), hence the subsystems 110, 120 cannot reside on a single chip if a PCI bus is used for interconnections. Zaumen neither discloses nor suggests any processing within a given network switch port, as claimed.

Regarding paragraph 12, as demonstrated above, there is no disclosure, singly or in combination, that the hypothetical combination would provide the claimed features of claims 12, 13, 16-18 of an integrated network switch having a plurality of network switch ports, where in each network switch port a flow module is configured for generating a packet signature based on generating first and second hash keys, as claimed.

Claim 19 is rejected in view of Kerr et al., Zaumen et al., Cheriton et al., Bellenger, and Rostoker et al. It is believed this dependent claim is allowable in view of the foregoing.

In view of the above, it is believed this application is in condition for allowance, and such a Notice is respectfully solicited.



To the extent necessary, Applicant petitions for an extension of time under 37 C.F.R.

1.136. Please charge any shortage in fees due in connection with the filing of this paper, including any missing or insufficient fees under 37 C.F.R. 1.17(a), to Deposit Account No. 50-0687, under Order No. 95-333, and please credit any excess fees to such deposit account.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'L R Turkevich', with a stylized flourish at the end.

Leon R. Turkevich  
Registration No. 34,035

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**Date: March 26, 2004**